

SECTION C
DESCRIPTION / SPECS. / WORK STATEMENT

ELECTRONIC EQUIPMENT SHELTERS

C.1. **GENERAL:** This project is for the engineering and installation of a 12' x 16' x 10' commercially available precast concrete electronic equipment shelter with preinstalled electrical and mechanical systems. The shelter will be installed on Yuma Proving Ground. The shelters shall meet or exceed all the following specifications. The shelters shall comply with Zone 4 earthquake ordinances

C.2. **PURPOSE:** The shelter will provide a safe environment to house delicate electronic and communication equipment at remote sites on Yuma Proving Ground.

C.3. **SCOPE:** The contractor shall engineer, fabricate, furnish and deliver on site, a completed, fully operational, turn-key equipment shelter to YPG, based on the information provided. Contractor shall provide all necessary personnel, supervision, tools, equipment, transportation, material and hardware for the fabrication and installation of the shelter. All applicable fire and safety codes shall be met.

C.4. **COMMERCIAL POWER:** There may be no commercial power available at the time of installation; therefore, it is the responsibility of the contractor to provide the power needed for the shelter installation. If commercial power is available, it may be used for shelter installation. It will be the responsibility of the Government to provide and install the shelter main disconnect and to connect to commercial power.

C.5. **PARTS LIST:** Contractor shall provide a listing of all parts and prices for the shelter and preinstalled equipment.

C.6. **PRINTS:** Contractor shall provide blueprints, specifications and descriptions of work for shelter, preinstalled electrical and mechanical equipment for approval prior to fabrication. All design and analysis calculations shall be signed and stamped by a certified engineer and shall conform to the most stringent standards applicable to said fabrication.

C.7. **SCHEDULE:** Delivery shall be coordinated with the Contracting Officer (KO) and/or Technical Representative (COTR). Advance notification of delivery is required. The contractor is responsible for transporting the shelter to the final destination.

Contractor's drivers should be experienced in hauling heavy concrete shelters and/or heavy equipment to remote sites. Contractor shall provide a crane and crane operator for off loading the shelters and equipment at the final shelter destination. The contractor must also provide off-loading supervision and rigging (spreader bar, straps, etc.).

C.8. **HANDLING:** Delivery and inventory of all materials and equipment shall be the responsibility of the contractor. Replacement of damaged or missing item(s) shall be with the same part number upon approval of the Contracting Officer.

C.9. **INSTALLATION:** The Contractor will be notified of any testing being conducted on the ranges that may result in down time. If the Government delays the installation, the Contracting Officer will adjust contractor's completion date accordingly. At most remote installation sites bathroom facilities are not available. It is the contractor's responsibility to furnish porta-johns for installation personnel.

C.10. **ACCESS:** This shelter site is located in remote area, approximately 3 miles west of US Highway 95 with 3 miles of unpaved graded dirt roads. This area is accessible by two wheel drive vehicles. The possibility of being stuck in the sand and/or desert does exist. It is the responsibility of the contractor to furnish all necessary equipment/and or tow vehicles to secure the release of stuck equipment and/or vehicles.

C.11. **CLEAN UP:** Contractor is responsible for the removal of all debris, excess hardware, materials and trash related to the delivery and setup of the shelter. The shelter site will be inspected by the KO/COTR and must pass inspection. Installation is not complete until shelter and job site passes final inspection. Non hazardous materials may be placed in the YPG dump. Contractor shall be responsible for the on-site dumpster if any is required.

C.12. GENERAL CONSTRUCTION SPECIFICATIONS :(See attached drawings)

C.12.1. SIZE: Shelters are a one-room design. The shelters outside dimensions are: twelve feet wide, sixteen feet in length, ten feet in height.

C.12.2. FOUNDATION DESIGN: YPG will install a slab per contractors design specifications. Contractor shall provide slab specifications at least 30 days prior to shelter delivery.

C.12.3. FLOOR STRUCTURE: The floor shall be designed to support a live load of 100 pounds per square foot minimum. 1/8-inch vinyl tile with a baseboard shall be installed over the floor. The floor and vinyl tile shall be level. Exterior joints/seams shall be guaranteed weather, insect and rodent proof.

C.12.4. WALL STRUCTURE: The walls shall be designed to support a load of 300 pounds per square foot minimum. A minimum of 3/4" plywood shall be attached to the concrete to allow securing of equipment. The plywood shall be covered with 1/2" fire code sheetrock or some other fire rated material. These materials shall be completely finished. Exterior walls shall be finished in aggregate; color to match existing Range Digital Transmission System (RDTS) shelters (beige). Exterior joints/seams shall be guaranteed weather, insect and rodent proof. All interior walls and seams shall be completely finished and be off-white in color.

C.12.5. ROOF: The roof shall be designed to be self supporting with no center post and support a live load of 60 pounds per square foot minimum. The roof shall be sloped to allow proper drainage. Ceiling shall have 3/4" plywood covering the concrete. The plywood shall be covered with 1/2" fire-code sheetrock or equally fire rated material. These materials shall be completely finished. All exterior joints and/or seams shall be guaranteed weather, insect and rodent proof and completely finished.

C.12.6. DOOR: The double steel door shall be 6 feet in width and 7 feet in height minimum. The doors shall be painted to match the exterior trim of the shelter, with epoxy paint and equipped with a wind chain. A dead bolt lock and doorknob lock shall be installed (BEST or equal). All locks on each shelter shall be keyed the same. The door frame shall be cast into the concrete wall to prevent water leaking into the shelter. A drip lip cap shall be installed above each door. All joints/seams shall be guaranteed weather, insect and rodent proof.

C.12.7. **WEATHER RESISTANCE:** The shelter shall be completely weather, insect and rodent proof. All joints and/or seams (wall-to-ceiling, wall-to-wall, and wall-to-floor) shall be double sealed. The shelter shall be designed to withstand winds in excess of 125 miles per hour and must comply with Zone 4 earthquake ordinances. All cracks, chips, etc., which do not affect the structural integrity of the cracked member shall be repaired. Such repairs shall not be visually distracting and shall be weather, insect and rodent proof. The contractor's engineering staff shall evaluate severe cracks, breaks, spalling etc. before repairs are attempted. The repairs must also be evaluated and approved by YPG. Any impairment of structural adequacy shall be cause for rejection.

C.12.8. Two copies of the standard commercial operation and maintenance manuals for shelter and equipment shall be provided.

C.13. **PREINSTALLED ELECTRICAL SYSTEMS:**

C.13.1. **WIRING:** All wiring shall be mounted in conduit and wireways in full compliance of ANSI/NFPA-70, the National Electrical Code, current revision.

C.13.2. One 200 Amp 120/208Vac, three phase, 60Hz 27 spaces with main breaker, snap-in utility power distribution panel in surface mounted enclosure with all circuit breakers installed shall be mounted on inside wall.

C.13.3. Smoke detector shall be installed in accordance with National Fire safety codes for this size of shelter.

C.13.4. ABC fire extinguisher shall be installed in accordance with National Fire safety codes for this size of shelter.

C.13.5. A weatherproof low sodium outside light over entrance door with day/night sensor.

C.13.6. Six each, two tube, 48-inch fluorescent lights with reduced wattage, high efficiency lamps, shall be installed in accordance with drawings.

C.13.7. Duplex, 20 Amp receptacles shall be installed in accordance with the drawing. No more than two receptacles shall be on the same 20 Amp circuit breaker.

C.13.8. One Emergency lighting unit, to include two 7.5-watt high output lamps, rechargeable battery with test light shall be

installed inside on the front wall. Operation and recharging of the battery shall be automatic.

C.14. PREINSTALLED MECHANICAL SYSTEMS:

C.14.1. 24-inch wide cable ladders (Saunders Brothers SB-24 or better) shall be installed in accordance with drawing. The cable ladder support brackets shall not extend below the bottom of the cable ladder. All sharp edges shall be removed to prevent possible injury to personnel working in the equipment shelter.

C.14.2. Two cable entry ports with cover shall be cast in the concrete floor as depicted in drawing.

C.14.3. Four each ½" PVC pipe opening shall be cast in the end walls per drawing.

C.14.4. One each, (Microflect or better) 2x2 wave-guide/cable/wall feed-thru's plates with 4" caps installed, aligned with the 24 inch cable ladder.

C.15. PREINSTALLED HEATING AND COOLING SYSTEMS:

C.15.1. Two outside vertical wall mounted energy efficient air conditioning/heat pump units (MARVAIR COMPAC II or EQUAL, 208Vac 3 phase). Each air conditioning units shall be capable of keeping the inside temperature at 78 degrees while the outside temperature is 125 degrees at 35% humidity. No window mounted units. There shall be a lead/lag controller attached to the air conditioning units.